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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,535	03/24/2004	Francis J. Kelley	02009US	6145

61611 7590 03/29/2007

ROHM AND HAAS ELECTRONIC MATERIALS
CMP HOLDINGS, INC.
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NEWARK, DE 19713

EXAMINER	
CHEN, KIN CHAN	
ART UNIT	**PAPER NUMBER**
1765	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/809,535	KELLEY ET AL.	
	Examiner	Art Unit	
	Kin-Chan Chen	1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-9* is/are pending in the application.

4a) Of the above claim(s) *6-9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 9, 2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> **(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.**

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over small (US 5,981,454) in view of Chopra (US 6,276,996) or Verhaverbeke (US 5,972,123) as evidenced by Grant & Hackh's Chemical Dictionary (page 121), Hawley's Condensed Chemical Dictionary (page 1066), Wang et al. (US 6,435,944) and Merriam-Webster's Collegiate Dictionary (tenth edition, page 1107).

Small teaches an aqueous composition useful for polishing copper on a semiconductor wafer. The composition may comprise oxidizer (col. 7, lines 54-55; col. 6, lines 18-29). The amount of oxidizer may vary from 0.5 to 30 wt. %, which overlaps the claimed range (col. 8, line 29). The complexing agent may be included (col. 6, lines 57-65). The concentration of complexing agent may vary from 1 to 25 wt. % (col. 7, line 22), which overlaps the claimed range and water. The pH of the composition may be between 3.5 and 7 (abstract), which overlaps the claimed range. The composition may be free of abrasive (see the detail on page 4) and free of polyacrylic acids.

Claim 1 differs from Small by specifying using inhibitor in the composition. However, it is common in the art of cleaning and wet etching to use inhibitor when using oxidizing agent to contact the metal. Chopra (col. 2, lines 49-50) or Verhaverbeke (col. 5, line 32) is only relied on to show the well-known feature of using the inhibitor in the etching and cleaning composition. Hence, it would have been obvious to one with ordinary skill in the art to use inhibitor in the etching and cleaning composition because it is common in the art and because it is disclosed by Chopra (col. 2, lines 49-50) or Verhaverbeke in order to prevent corrosion of the metal. The concentration of the inhibitor of Chopra encompasses the claimed range.

A prior art which teaches a range within, overlapping, or encompassing) the claimed range anticipates the range or is sufficient to establish a prima facie case of obviousness. Titanium Metals v. Banner, 778 F.2d775, 227 USPQ 773, Fed. Cir.1985.Atlas Power v. Ireco, 51 USPQ2d 1943, Fed. Cir. 1999. Ex parte Lee, 31 USPQ2d 1105, BPAI 1993. In re Peterson, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed.Cir. 2003).

Small teaches that the surfactants may be included in the composition (col. 8, lines 43-45). Small is not particular about the surfactant. Hence, it would have been obvious to one with ordinary skill in the art to use commonly used surfactant such as

carboxy methyl cellulose (CMC), see Grant & Hackh's Chemical Dictionary (page 121) and Hawley's Condensed Chemical Dictionary (page 1066).

Small teaches the composition may be used to perform CMP planarization. Therefore, it is considered to read on "polishing and removing copper". Small teaches that an emulsion slurry may be used. However, the composition of Small does not use abrasive in the slurry, therefore, it is free of abrasive. See Wang and Merriam-Webster's Collegiate Dictionary (tenth edition, page 1107) in the record as evidence to show that the slurry may be without abrasive.

Claim 1 differs from the prior art by specifying various amount of additive (such as surfactant). However, It would have been obvious to one with ordinary skilled in the art to employ these components in combination for their known functions and optimize the amount of each additive. MPEP 2144.06.

The limitations of claims 1-3 have been addressed above and rejected for the same reasons, supra.

Dependant claim 4 differs from the prior art by specifying various degree of substitution and molecular weight of carboxy methyl cellulose. Because same are merely a matter of choices of design depending on the product requirements, in absence of any unexpected result which is different in kind and not merely in degree from the result of the prior art, it would be obvious to one skilled in the art to use various a degree of substitution and molecular weight of carboxy methyl cellulose in order to accommodate the specific product and meet the product requirement.

Response to Arguments

4. Applicant's arguments filed January 24, 2007 (entered February 9, 2007, RCE) have been fully considered but they are not persuasive.

Applicant has argued that Small relies on an emulsion slurry to remove copper, therefore, it fails to disclose an abrasive-free slurry. It is not persuasive. As has been stated in the office action, the composition of Small does not use abrasive in the slurry, therefore, it is free of abrasive. See Wang (or Held) and Merriam-Webster's Collegiate Dictionary (tenth edition, page 1107) in the record as evidence to show that the slurry may be without abrasive (free of abrasive).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Grant & Hackh's Chemical Dictionary (page 121) and Hawley's Condensed Chemical Dictionary (page 1066) show that carboxy methyl cellulose (CMC) is a surfactant (also called surface-active agent, emulsifier, or wetting agent). Wang et al. (US 6,435,944; col. 5, lines 1-3) shows that the slurry may be without abrasives. Also Held (US 6,509,270; col. 11, lines 23-25) shows that the slurry may be free of abrasives. Merriam-Webster's Collegiate Dictionary (tenth edition, page 1107) shows that slurry is a watery mixture with insoluble matter, which does not have to be abrasives.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kin-Chan Chen whose telephone number is (571) 272-1461. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

March 26, 2007

K. Chen

Kin-Chan Chen
Primary Examiner
Art Unit 1765